

**TESTIMONY OF
ROBERT J. MEYERS
PRINCIPAL DEPUTY ASSISTANT ADMINISTRATOR
OFFICE OF AIR AND RADIATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
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COMMITTEE ON ENERGY AND COMMERCE
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Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to discuss with you today the potential for regulation of greenhouse gases (GHGs) under the Clean Air Act.

This hearing is timely. EPA Administrator Stephen L. Johnson is in the process of deciding how best to respond to the Supreme Court's decision in *Massachusetts v. EPA*. As he informed you in a recent letter, he has decided to issue an Advanced Notice of Proposed Rulemaking (ANPR) that will examine the ways in which regulation of GHG emissions under one provision of the Clean Air Act interacts with, and could lead to, regulation of GHG emissions under other provisions of the Act. The Administrator believes that the ANPR approach gives appropriate care and attention to the complexities involved, and that it is critically important to understand and address the implications of regulating GHGs under the Act in deciding how to proceed. The ANPR will present and request comment on the best available science relevant to making an endangerment finding. It will also examine and seek information on the implications of an

endangerment finding on the regulation of vehicles and stationary sources under the Clean Air Act in light of the interconnections among various provisions of the Act.

In a broader context, President Bush has pointed out that climate change is a serious global challenge. Since 2001 the Administration has devoted over \$45 billion in resources to addressing climate change science and technology and has implemented mandatory programs in some of the most significant sectors that will potentially prevent 5 to 6 billion metric tons of GHG emissions through 2030. The Administration is implementing over 60 federal programs that are directed at developing and deploying cleaner, more efficient energy technologies, conservation, biological sequestration, geological sequestration, and adaptation. Internationally, the President launched the Major Economies Process, which brings together the world's largest users of energy and largest producers of GHG emissions, including both developed and developing nations, to develop a new approach that can slow, stop, and eventually reverse the growth of GHG emissions. It is in this broader context that we are here to discuss the Clean Air Act as one of many tools available to policy makers in addressing greenhouse gas emissions.

Through his “Twenty in Ten” initiative, the President last year committed the United States to reducing gasoline demand and greenhouse gas emissions from motor vehicles and fuels as part of a national approach for addressing the nation’s dependence on petroleum and global climate change. Congress answered the President’s call to increase vehicle fuel economy standards and the use of renewable fuels through enactment of Titles I and II of the Energy Independence and Security Act (EISA). Work is now proceeding at EPA and other agencies to implement the new law.

The Clean Air Act, as enacted in 1970 and substantially amended in 1977 and 1990, provides broad authority to address air pollutants that are emitted by mobile and stationary sources. Cars, trucks, construction equipment, airplanes, ships as well as a broad range of electric generation, industrial, commercial and other facilities may be subject to various Clean Air Act programs.

In the *Massachusetts* case, the Supreme Court held that the Administrator of EPA must decide whether or not greenhouse gas emissions from motor vehicles cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare, or to explain why scientific uncertainty is so profound that it prevents making a reasoned judgment on such an endangerment determination. If the Administrator ultimately finds that motor vehicle GHG emissions meet that two-part "endangerment" test, section 202(a) of the Clean Air Act requires him to set motor vehicle GHG emissions standards.

Through the ANPR, the Administrator is considering whether that endangerment test has been met and, if so, what vehicle standards would be appropriate. The ANPR is also designed to address and seek public comment and information on a range of mobile and stationary source issues that could relate to and arise from a decision to regulate GHG emissions under the authority of the Clean Air Act. In developing a response to the Supreme Court's decision, EPA has come to fully appreciate that Clean Air Act regulation of GHGs would not stop at vehicle standards issued under section 202(a) of the Act. Recognizing similarities in statutory language as well as regulatory "triggers" embedded in the Act, we have evaluated the broader ramifications of the Court's decision for potential Clean Air Act regulation. This review has made clear that regulation of

mobile or other sources of GHGs under the Clean Air Act could potentially affect many stationary sources going well beyond the typical power plant or factory to include large commercial facilities, schools, hospitals, and residential apartment buildings or complexes.

As I will describe below, there are several provisions in the Clean Air Act that contain endangerment language similar to that found in section 202(a). A finding of endangerment for GHGs under one provision of the Act could thus have ramifications for findings of endangerment under other provisions of the Act. In addition, vehicle or other Clean Air Act GHG emissions standards could trigger preconstruction permit requirements for facilities that were not the subject of the promulgated standards. How we define a term in one part of the Act could also affect other provisions using the same term.

In brief, the Clean Air Act provides an integrated and interrelated set of authorities for reducing pollution. This system of regulation has resulted in our nation making substantial gains in the reduction of criteria pollutants, like smog and particulate matter, as well as air toxics. Utilization of existing Clean Air Act provisions to address GHGs, which tend to be well-mixed in the global atmosphere, however, may present different challenges. Therefore, it is prudent to fully consider how existing Clean Air Act authorities would or could work together if an endangerment finding were made under any provision of the Act and any subsequent GHG controls were established under the authority of the Act.

Pending petitions, lawsuits, and deadlines are also affected by the potential implications of the Court's decision. Over the past several months, EPA has received

seven petitions from states, localities, and environmental groups to set emission standards for other types of mobile sources, including non-road vehicles such as construction and farm equipment, ships and aircraft. By the end of this month, the Agency must also address public comments seeking the addition of GHGs to the pollutants covered by the new source performance standard (NSPS) applicable to petroleum refineries under section 111 of the Clean Air Act. Additionally, in response to a remand by a federal court, EPA must decide whether the NSPS for utility and industrial boilers should be expanded to cover GHGs. Legal challenges have also been brought seeking controls for GHG emissions in preconstruction permits for several coal-fired power plants.

In light of the broad array of pending and potential Clean Air Act actions concerning GHGs, we have decided to inform and consult with the public. Through the ANPR, we will discuss our work to date in response to the Supreme Court's decision, including issues and questions related to endangerment and vehicle standards, and our examination of the potential effects of using various authorities under the Clean Air Act. Thus, the ANPR will provide the public with a timely opportunity to help shape an overall approach for potentially addressing GHG emissions under the Clean Air Act. EPA also notes that the Clean Air Act is not the only tool available for addressing GHG emissions at the Federal level and that actions taken through Clean Air Act regulations are part of broader regulatory, policy, and programmatic actions to address GHG emissions taken by EPA, other Federal departments and agencies, state and local governments, the private sector, and the international community.

Individual provisions of the Clean Air Act can be complex. There are also several decades' worth of Clean Air Act interpretations embodied in regulatory activity and

various court decisions. A full explanation of these provisions and their historical interpretation could easily fill a text book. Today, I would like to provide you with something more feasible -- a general overview of several Clean Air Act provisions that might be applied to GHG emissions. As the Subcommittee has requested, I will briefly describe:

- the finding or action that could lead to regulation under a section,
- the types of sources potentially regulated,
- the factors EPA could consider in standard-setting, and
- the flexibility that EPA could provide sources (e.g., whether emissions trading would be permissible).

But I must first offer an important caveat: The following discussion of authorities should not be interpreted to mean that EPA has reached any conclusions regarding whether particular authorities would be mandatory or discretionary, or suitable or unsuitable, for use in reducing GHG emissions. Although we discuss some issues with regard to their potential use, this testimony does not present conclusions. Many stakeholders have raised significant issues and ideas with regard to the potential application of the Clean Air Act to GHG emissions. EPA is still in the process of evaluating the various Clean Air Act authorities, and we will be seeking public input on use of those authorities in the ANPR, where we anticipate a more expansive discussion of the issues, challenges and opportunities these authorities raise.

Stationary Source Authorities

The Clean Air Act includes a number of stationary source authorities that together have successfully reduced air pollution at the same time the nation's economy has grown.

These authorities provide three main pathways for potentially regulating stationary sources of GHG emissions. They include, in their order of appearance in the Act, national ambient air quality standards (NAAQS) and state plans for implementing those standards; performance standards for new and existing stationary sources; and hazardous air pollutant standards for stationary sources. I will describe each of these Clean Air Act programs in turn, followed by a discussion of issues related to the Prevention of Significant Deterioration (PSD) program.

National ambient air quality standards: Section 108 of the Act requires EPA to list pollutants: 1) which, in the Administrator's judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare; 2) which result from numerous or diverse mobile or stationary sources; and 3) for which the Administrator plans to issue air quality criteria. For listed pollutants (so-called "criteria pollutants"), section 109 of the Act requires that EPA set and periodically revise national primary and secondary ambient air quality standards. Primary standards are standards which, in the judgment of the Administrator, are requisite to protect public health with an adequate margin of safety. Secondary standards are standards judged by the Administrator to be requisite to protect the public welfare from any known or anticipated adverse effects. Under established Supreme Court precedent, both primary and secondary standards are set without consideration of costs or ease of implementation.

Once standards are established under section 109, section 110 of the Act sets forth detailed requirements for state plans to attain and maintain the primary and secondary standards. Costs and feasibility may be considered in the development of these state

plans and the federal rules that aid in achieving air quality standards. Additional requirements for nonattainment areas are contained in Part D of Title I of the Act.

An important issue that has been raised is whether making an endangerment finding under section 202 or other sections of the Act would compel the Agency to list GHGs under section 108 in view of the other listing criteria. We are evaluating, and will seek comment on in the ANPR, the extent of the Agency's latitude in deciding whether or not to list a new pollutant under section 108 for the purpose of setting a NAAQS under section 109.

Another issue to consider is the length of time it would take to develop a NAAQS and to implement controls on GHG emission sources through the SIP process. The Clean Air Act provides a statutory framework for the designation of areas (either attainment, nonattainment or unclassifiable) as well as statutory deadlines for the submission of state implementation plans and deadlines for attainment of various standards. Based on past experience, we might expect that it would take a decade or more to complete the NAAQS process: several years to list the pollutant(s) under section 108 and promulgate a NAAQS for the pollutant(s); two years to make attainment and nonattainment area designations; three additional years for states to submit to EPA state plans and rules to implement the standards; and typically additional time for regulated sources to comply. Litigation has at least once contributed to delaying implementation of a NAAQS.

It is also important to consider that all NAAQS are subject to a statutory review period. Every five years, the Administrator is required to review and determine, based on the latest scientific information, and with consultation and consideration of the recommendations of the Clean Air Act Scientific Advisory Committee, whether to revise

existing NAAQS. Revision of a NAAQS results in another round of area designations and state plans.

More fundamental are the questions raised by the potential application of NAAQS and SIP requirements to global air pollutants like GHGs. Regardless of where in the world they are emitted, GHGs like CO₂ are long-lived, and thus mix and distribute in the atmosphere in a way that results in relatively uniform concentrations around the globe. Under a hypothetical NAAQS for the longer-lived GHGs, depending on the level of the standard, the entire country would be either in attainment or in nonattainment with the standard. As there would be no basis for differentiation among the states based on atmospheric concentrations, EPA may have to consider some sort of burden-sharing allocation of responsibility among the states with respect to their relative contribution to attainment of a national standard

If the country were in attainment, states would be required to submit enforceable state plans to maintain the standard and to apply the prevention of significant deterioration (PSD) program to the GHGs covered by the NAAQS. State plans could include limits on stationary sources and mobile source measures not preempted by the Act. As explained in more detail below, PSD requires new source permitting, best available control technology, and emission limits that avoid significant degradation of air quality.

If the country were in nonattainment, states would be required to submit plans that demonstrate attainment of the primary NAAQS within a 10-year maximum time frame. Because controls implemented by a single state, or even by the entire U.S., could not alone ensure stabilization or reductions in global GHG concentrations, this requirement

would be problematic. This is true despite the fact that there may be some flexibility for some nonattainment requirements. Required elements of a nonattainment plan include a reasonable further progress demonstration, reasonably available control measures, transportation conformity, and nonattainment new source review for new and modified major sources. Each of these elements can impose substantial duties on states and localities.

Under either an attainment or nonattainment scenario, state plans could also be required under section 110(a) (2) (D) to prohibit significant contribution to nonattainment or interference with maintenance of the NAAQS in other states. Under section 110(a) (2) (D), EPA has established interstate cap-and-trade programs for nitrogen oxides and sulfur dioxide (e.g., the Clean Air Interstate Rule). EPA has not determined whether or not such provisions would necessarily be “triggered” or applicable to a GHG NAAQS. However, these provisions have been part of past NAAQS implementation.

New source performance standards (NSPS): Section 111(b) of the Act requires EPA to establish emissions standards for any category of new and modified stationary sources that the Administrator, in his judgment, finds “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.” EPA has previously made endangerment findings for 74 source categories that are now subject to NSPS. An endangerment finding would be a prerequisite for listing additional source categories for NSPS.

NSPS for new and modified sources can be issued regardless of whether there is a NAAQS for the pollutant being regulated. NSPS emission limits are to reflect “the best system of emission reduction,” taking into account cost and any non-air-quality health

and environment impacts and energy requirements. EPA has significant discretion in selecting the categories and sizes of facilities to be covered and the level of the standards to be set. Emissions limits can be written for equipment within a facility or for an entire facility. EPA believes section 111 allows some form of emissions trading among facilities.

Section 111(d) calls for states to issue performance standards for existing sources in the same categories for which EPA regulates new sources, but only when the pollutant in question is neither listed as a criteria pollutant to be regulated through a NAAQS under section 109, nor regulated from the source category under section 112. Historically, EPA has issued model standards for existing sources by rule that could then be adopted by states. Altogether, section 111 provisions for new and modified and existing sources allow significant flexibility in regulation that may not be available under other Clean Air Act provisions.

Section 111 also requires EPA to review and, if appropriate revise, existing NSPS every eight years unless the Administrator determines that “such review is not appropriate in light of readily available information on the efficacy of such standard.” EPA is currently in the process of reviewing NSPS for a number of source categories, and in the context of some of those reviews, commenters are urging the Agency to add GHG limits to the section 111 standards.

Standards for hazardous air pollutants: Section 112 provides for regulation of hazardous air pollutants from stationary sources. Congress initially listed more than 180 hazardous air pollutants in the statute, but provided a mechanism whereby EPA may add a pollutant which is “known to cause or may reasonably be anticipated to cause ...

adverse effects to human health or adverse environmental effects.” Once EPA lists a pollutant, the Agency must set technology-based “maximum achievable control technology” (MACT) standards for all categories of major sources of the listed pollutant. Eight years after a MACT standard is set, EPA is required to consider whether to set tighter MACT standards or, if needed to protect health and the environment, residual risk standards. Section 112 also authorizes EPA to address smaller sources of listed pollutants through potentially less stringent emissions limits.

Under section 112, major sources are defined as those that have the potential to emit 10 tons per year of any one hazardous air pollutant or 25 tons per year of multiple hazardous air pollutants. These low thresholds reflect the fact that these authorities were originally established by Congress for regulation of toxic air pollutants which are emitted and can contribute to adverse effects at relatively low volumes. Since CO₂ is typically emitted in much higher quantities than currently listed hazardous air pollutants (or even NAAQS pollutants), application of these thresholds to GHG emission sources could result in a massive increase in the number of sources subject to section 112 standards.

Unlike NSPS, section 112 establishes minimum stringency requirements for MACT standards based on levels of performance achieved by similar facilities, restricting EPA’s ability to consider cost. EPA has interpreted section 112 to allow emissions averaging within a source, but not to allow emissions trading among different major sources. Pollutants that are regulated under section 112 are not subject to preconstruction review under the prevention of significant deterioration (PSD) program.

Prevention of Significant Deterioration (PSD): Once EPA controls a GHG under any section of the Clean Air Act -- except for sections 112 and 211(o) – new or modified

major stationary sources of that pollutant would become subject to the requirements of the PSD program. As a general matter, new major stationary sources and modifications at existing major stationary sources constructed in attainment areas must undergo the PSD permitting process and install best available control technology for each pollutant subject to regulation under Act. These requirements apply regardless of whether a NAAQS for the pollutant exists.

For PSD purposes, major stationary sources are those with the potential to emit 100 tons per year of a regulated air pollutant in the case of certain statutorily-listed source categories, and 250 tons per year in the case of all other source categories. New large schools, nursing homes, and hospitals could be considered a “major source” under this section of the Clean Air Act. For modifications, only those that increase emissions above a tonnage threshold established by EPA for each regulated pollutant through rulemaking triggers PSD. Until EPA establishes this so-called “significance” level, however, any increase in a regulated pollutant at a major stationary source undergoing a modification would trigger PSD permitting.

As noted previously, PSD sources are required to install best available control technology (BACT). BACT must be at least as stringent as any applicable NSPS, and is to reflect the maximum degree of emissions reduction achievable for such a facility, taking into account energy, environment and economic impacts and other costs.

Controlling GHG emissions under any section of the Clean Air Act could significantly increase the number of stationary sources subject to PSD permitting. Because CO₂ is typically emitted in larger quantities than criteria and other traditional air pollutants from combustion sources, facilities not previously subject to Clean Air Act

permitting -- such as large commercial and residential buildings heated by natural gas boilers -- could qualify as major stationary sources for PSD purposes. In addition, some small industrial sources not now covered by PSD could be expected to become subject to PSD due to their GHG emissions.

Currently, our best estimate of the potential impact of including GHGs in the PSD program is that the number of PSD permits issued annually nationwide could rise by an order of magnitude above the current 200-300 a year. Such estimates are subject to significant uncertainty. At present, we do not have comprehensive information on GHG emissions from the many categories of stationary sources of such emissions; instead we have relied on available information and general engineering estimates.

Such a broadening of the PSD program could pose significant implementation issues for covered facilities (particularly newly covered facilities) and permitting agencies. EPA is examining the scope of these potential difficulties and whether, for GHGs, the program could be limited to larger sources, at least temporarily, in view of the very substantial increase in administrative burden that might otherwise occur. However, at present it is unclear as to whether EPA has the legal discretion to exempt sources above the statutory thresholds. In addition, EPA is exploring concepts for streamlining implementation of the PSD program for smaller sources, such as guidance on general permits or source definitions for BACT determinations and model permits for use by permitting agencies. EPA will address permitting issues in greater detail in the planned ANPR.

Mobile Source and Transportation Fuel Authorities

Title II of the Clean Air Act provides extensive authority for addressing emissions from the transportation sector in a comprehensive way. Under Title II, EPA has the authority to address all mobile sources and develop a holistic approach to regulation, taking into account the unique aspects of each category, including passenger vehicles, trucks and nonroad vehicles, as well as the fuels that power them. For example, EPA has used Title II authorities to achieve deep emission reductions in such pollutants as lead, hydrocarbons, nitrogen oxides, particulate matter, and carbon monoxide from all categories of motor vehicles. These mobile source authorities work in tandem with the Act's stationary source authorities to enable EPA to help states attain and maintain the NAAQS and otherwise protect public health and the environment from air pollution.

Section 202(a), the section at issue in the *Massachusetts* case, authorizes EPA to set emissions standards for new motor vehicles or new motor vehicle engines. This provision states that “the Administrator shall by regulation prescribe ... standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles ... which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.” Section 202(a) covers all vehicles commonly described as on-highway or on-road vehicles, including passenger cars, light trucks, heavy-duty trucks, buses and motorcycles. Section 202(a) emissions standards only apply to new vehicles and engines, although EPA does have authority to set requirements for rebuilding practices of heavy-duty vehicles, including emission standards.

In setting standards under section 202(a), EPA may consider the need for emissions standards, technological feasibility and other factors such as cost, lead time,

safety and energy impacts. Emission standards may be technology forcing where determined to be appropriate, so long as they take effect “after such period as the Administrator finds necessary for the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.” EPA also has discretion to establish standards that allow the use of averaging, banking and trading of emission credits, which allows EPA to set standards that achieve greater emission reductions while providing flexibility to manufacturers in meeting the standards.

In this context, it is important to note that in EISA, Congress called on the Department of Transportation to tighten vehicle fuel economy standards, which will achieve significant GHG emission reductions. We recognize that if we were ultimately to use Clean Air Act authorities to establish GHG emission standards for motor vehicles, we would need to take care to meet the Supreme Court’s expectation that emission standards can be crafted so as to avoid inconsistency with the fuel economy program issued under the new energy law. To that end we intend to seek comment on this issue in the ANPRM.

Other Clean Air Act Title II provisions provide EPA with authority for emission standards for nonroad engines and vehicles (section 213), aircraft (section 231), and fuels (section 211). Each of these provisions (with the exception of section 211(o)) contains a variation of the “endangerment” test found elsewhere in the Act.

Nonroad engines and vehicles cover a wide variety of engines and equipment that are typically mobile or transportable. They include lawn and garden equipment, off-road vehicles, portable generators, farm and construction equipment, ships and locomotives.

EPA may set emissions standards for these engines and equipment if the appropriate endangerment determination is made. Like the standards for motor vehicles, the emission standards for these engines and equipment would only apply to new engines or equipment. In general, EPA may consider the same factors and provide the same kinds of flexibility compliance mechanisms (e.g., averaging, trading and banking) as apply to standard-setting for new motor vehicles.

For aircraft, EPA is required to set emissions standards if the appropriate endangerment determination is made under section 231. EPA's authority is not limited to setting standards for new aircraft. As with the other categories of mobile sources, EPA has significant discretion in the factors it considers in setting standards for aircraft and the ability to develop flexible compliance mechanisms.

In the case of fuels, under section 211(c), EPA may establish controls related to fuels or fuel additives where the emissions products of the fuel or fuel additive cause or contribute to air pollution that, in the judgment of the Administrator, may reasonably be anticipated to endanger public health or welfare. This authority extends to fuels or fuel additives for use in motor vehicle or nonroad engines; it does not extend to jet fuel or fuel used in stationary sources. In setting standards or requirements for fuels, EPA can consider all of the same factors discussed above for motor vehicles.

In the past, the Agency has used a systems approach for considering fuels and vehicles together. We have also allowed emissions averaging and flexible banking and trading with market incentives for early introduction of clean technologies and phase-ins to provide more time to address technical challenges.

Section 211(o) establishes the renewable fuels standard and, as recently amended by EISA, requires significant quantities of renewable fuel, including renewable fuel meeting various GHG “lifecycle” emissions thresholds. As amended by EISA, section 211(o) requirements for GHG emission reductions do not trigger any further regulation of GHGs under the Clean Air Act, nor is regulation under section 211(o) contingent on an endangerment finding.

I should also mention, without going into detail at this point, section 615 which contains endangerment language related to effects on the stratosphere. This section is mentioned in the interest of providing a comprehensive indication of possible Clean Air Act authorities and not for the purpose of identifying specific interactions with other Clean Air Act sections.

At this point in our examination of the Clean Air Act authorities potentially applicable to GHGs, I offer the following points, which the Agency will further explore in the ANPR:

- Interconnections among Clean Air Act provisions call for careful evaluation before any final action involving GHGs is taken under the Act.
- A variety of Clean Air Act authorities may be available to address GHG emissions from many types of mobile and stationary sources.
- Some of the authorities are better designed for local/regional pollutants than for global pollutants.
- Some authorities provide substantially more flexibility for EPA to tailor requirements to the unique circumstances presented by GHGs, because they provide EPA with discretion regarding what types and sizes of sources to

regulate and how to regulate them (e.g., through a trading program), and the authority to fully weigh costs in setting emissions standards.

- Clean Air Act authorities vary in the flexibility they allow for setting standards and providing compliance time periods that would be optimal for development of advanced technologies.
- Clean Air Act authorities also vary in whether they are subject to statutory review periods that could result in additional assessment of regulatory levels and actions previously established.
- Controlling GHG emissions under most provisions of the Clean Air Act could substantially expand the number of sources required to obtain PSD permits in the absence of administrative or other efforts to tailor those requirements to GHG emission sources.

We look forward to exploring these important issues further with Congress and the public. Thank you again for the opportunity to testify.